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Editor - Captain L. B. Marshall, MC, USN

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Announcement

The Surgeon General announces that, in a further effort to attract interest in the Medical and Dental Corps of the U. S. Navy, the U. S. Navy Medical News Letter will be sent to all junior and senior medical and dental students now participating in the Ensign 1135 program. The total number is over 1,100. It is believed that the News Letter will be informative and valuable to these students and give them some insight into one phase of military medicine and dentistry.

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The Effects and Treatment of Nerve Gas Poisoning

The nerve gases are a group of organic esters of phosphoric acid derivatives which, because of their volatility and toxicity, are among the most potent of the known chemical warfare agents.

The mechanism of action, effects, prevention, and treatment of nerve gas poisoning has proved to be similar in general to those of the more familiar organic phosphate anticholinesterase (antiChE) compounds. This report summarizes the effects that have been observed in normal volunteer subjects following the administration of, or exposure to, one of the more toxic of these nerve gases.

"Nerve gas" is a colorless liquid which is volatile at ordinary temperatures. Its effects, like those of the other organic phosphate antiChE compounds, are referable to the inhibition of ChE enzymes in the tissues and the resultant accumulation of acetylcholine at the ends of postganglionic cholinergic nerves to smooth and cardiac muscle and secretory glands (muscarinelike effects), preganglionic nerves to autonomic ganglia, and motor nerves to striated muscle (nicotinelike effects), and in the central nervous system. The inhibition of ChE enzymes by "nerve gas" rapidly becomes irreversible, so that the effects of this compound are prolonged. Until the tissue cholinesterases have been restored to normal activity, probably by the regeneration of enzyme over a period of days or weeks, subjects who have been exposed to "nerve gas" have increased susceptibility to its action, which may be cumulative.

"Nerve gas," like the other organic phosphate anticholinesterases, may be absorbed by any route. When dispersed as a vapor, spray, or aerosol, or adsorbed on dust, it is readily absorbed through the respiratory tract and conjunctivas. Liquid "nerve gas," or solutions, may be absorbed through the skin, conjunctivas, gastrointestinal tract, or following injection.

Local effects begin within a few minutes after exposure. The local symptoms last for several hours to a day, while the miosis persists for 2 to 5 days. Moderate systemic effects begin within half an hour after respiratory exposure, three-quarters of an hour after oral exposure, and 2 to 3 hours after percutaneous exposure. It is probable that the latent period following exposure to

sublethal or lethal concentrations would be shorter. Mild systemic symptoms may last for a few hours while moderately severe symptoms may not reach their maximum severity until 4 to 8 hours after onset, and usually diminish over a period of 1 to 6 days. During the period of recovery symptoms may recur intermittently, especially following exertion. The electroencephalographic changes may persist for as long as 18 days.

The time interval between exposure to "nerve gas" and death is not known in man. The average time interval between accidental exposure to parathion and death is 10-1/2 hours, and between the onset of symptoms and death, 9 hours. Following overwhelming exposure to parathion, especially by inhalation, these time intervals may be as short as 1 hour. Terminally, respiration becomes shallow, labored, and rapid, cyanosis ensues, and the blood pressure becomes unobtainable. Factors contributing to death due to parathion are believed to be depression of the respiratory and circulatory centers in the brain, weakness of the muscles of respiration due to neuromuscular block, and, in some instances, excessive bronchial secretion, pulmonary edema, and bronchoconstriction. It is likely that death due to "nerve gas" would be the result of similar functional alterations.

The following recommendations for treatment of "nerve gas" poisoning are based largely upon experience acquired in the management of moderate symptoms due to "nerve gas," and of severe intoxication following administration of tetraethyl pyrophosphate or accidental exposure to parathion.

Mild or moderate symptoms are treated by the intramuscular administration of 2 mg. of atropine sulfate or tartrate. The effects of intramuscular atropine begin about 20 minutes after injection and are maximal 40 minutes after injection. If the muscarinelike symptoms of "nerve gas" are not relieved, and if signs of atropinization (dry mouth and skin) do not appear, the injection of atropine should be repeated at 30-minute intervals until this occurs. A mild degree of atropinization should then be maintained for at least 24 hours by the oral or intramuscular administration of 1 or 2 mg. of atropine at intervals of 1 to 4 hours. Smoking should be avoided until the symptoms of "nerve gas" intoxication have subsided.

Severe symptoms should be treated by the intravenous administration of 2 to 4 mg. of atropine. The effects of intravenous atropine begin 1 to 4 minutes after injection and are maximal within 8 minutes after injection. If the muscarinelike symptoms are not relieved, and if signs of atropinization do not appear, the intravenous injection of atropine in doses of 2 mg. should be repeated at 5 to 10 minute intervals until this occurs. A mild degree of atropinization should then be maintained for at least 48 hours.

Ocular symptoms produced by local absorption do not respond to the systemic administration of atropine but are relieved by the local instillation of 2% homatropine, repeated as needed at intervals of several hours for 1 to 3 days. Severe symptoms may require the local instillation of 0.5 or 1% atropine. If local ocular effects of "nerve gas" are present, the size of the pupil cannot be used as an indicator of the systemic effects of "nerve gas" or of atropine.

Respiratory depression requires prompt artificial respiration. This is best performed by means of a portable bellows-type resuscitator, equipped with gas mask canister, but if this is not available manual artificial respiration should be instituted. The Holger-Nielson method is the most efficient manual procedure. If atropine administration was not instituted prior to the onset of respiratory depression, this should be started simultaneously with artificial respiration. Oxygen should be given, if available, and oropharyngeal suction and airway employed, if necessary. In the most severe intoxication artificial respiration may have to be maintained for hours.

If convulsions are prolonged, interfere with respiration, and are not relieved by intravenous atropine, the careful administration of trimethadione (tridione), a barbiturate, or ether for their amelioration may be of value. Trimethadione may be given intravenously or intramuscularly, in doses of 1 gm., repeated if necessary. It has less depressant effect on respiration than the barbiturates. Morphine should not be administered. (Am. J. Med., Jan. 1953, D. Grob and A. M. Harvey)

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Hematopoietic Depression Induced by Chloromycetin

Until recently Chloromycetin was administered without much hesitation because numerous clinical reports had stressed its low degree of toxicity. The only toxic complications which were considered significant were mild gastrointestinal reactions and avitaminotic symptoms presumably caused by elimination of a normal bacterial flora. However, a number of reports have appeared which indicate that Chloromycetin may exert a depressive action on the bone marrow in some patients. The danger of this depression has been emphasized by editorials in several medical journals and is now widely known.

Two cases were observed at the New Haven Hospital in which Chloromycetin appeared to be responsible for erythropoietic depression. In both cases bone marrow examinations and reticulocyte counts were carried out before, during, and after Chloromycetin administration.

Anemia and hypoplasia of the erythropoietic bone marrow tissue were observed in the 2 patients, 1 treated with a total of 155.5 gm. of Chloromycetin in 50 days and the other with a total of 66.5 gm. in 24 days. Both patients had received small amounts of other drugs prior to and during Chloromycetin administration. When Chloromycetin was discontinued a striking reticulocyte response occurred together with reappearance of normoblasts in the bone marrow. This sequence indicates a direct relationship between the administration of Chloromycetin and the observed erythropoietic hypoplasia.

During treatment there was a gradual decrease in the total number of leukocytes, especially the neutrophilic leukocytes. The significance of this was not appreciated until a bone marrow examination revealed myeloid

maturation arrest at the metamyelocytic stage. Prior to this examination the leukocyte counts had not been regarded as unusual because in the first case leukopenia was looked upon as a manifestation of typhoid fever and in the second case the initial leukocytosis was expected to subside during antimicrobial therapy. It seems significant, however, that when the drug was discontinued the number of circulating leukocytes increased in both cases.

The number of megakaryocytes and platelets was not influenced significantly by therapy. The final hematologic diagnoses were reversible erythropoietic hypoplasia with myeloid maturation arrest induced by Chloromycetin.

Chloromycetin contains a nitro-benzene ring in its structural formula and from the beginning of its clinical use in 1948 it has been considered a potential bone marrow toxin. So far 40 cases have been reported in which administration of Chloromycetin has been followed by maturation arrest or hypoplasia of one or more bone marrow elements. Twenty-seven of these cases have terminated fatally.

In most of these cases it has been difficult to prove beyond doubt that Chloromycetin was responsible. Idiopathic hypoplastic anemia occurs occasionally and many drugs besides Chloromycetin were administered. However, on the basis of 8 cases (Volini's, Lindau's and the 2 cases reported here) in which discontinuance of Chloromycetin resulted in immediate hematologic recovery, it seems justifiable to assume that the bone marrow depression in all these cases probably was caused by Chloromycetin.

The bone marrow changes encountered during Chloromycetin administration have ranged from mild, reversible maturation arrest to severe, irreversible aplasia. Dosage and length of treatment have varied in these cases but most of them had large doses or prolonged treatment.

Bone marrow depression caused by Chloromycetin is still considered a rare complication. However, when especially looked for, Wilson found it in 2 of 62 treated cases, Lindau in 3 of 8 cases, and both cases reported here were discovered within 1 month. It is possible that hematologic changes observed in infectious diseases treated with Chloromycetin too often have been attributed to the infectious process itself without considering the possibility of drug-induced bone marrow depression.

Knowledge of this complication should result in close hematologic observation of all patients who receive Chloromycetin and immediate discontinuance of the drug if there are any signs of bone marrow depression. It is important to follow the red blood cell count and the white blood cell count as well as the blood smear because drug-induced bone marrow depression in its early reversible stage may involve erythropoiesis, myelopoiesis, or thrombocytopoiesis independently. Bone marrow examination should be used to check any suspicion of hematopoietic depression. With these precautions it seems safe to continue the use of this valuable antibiotic in cases where it is indicated. (Blood, Feb. 1953, A. Erslev)

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Penicillin Effects on Blood Coagulation

The investigations described herein represent an attempt to analyze the factors responsible for the decrease in coagulation time following penicillin administration. The immediately apparent approaches to this problem were (a) to determine the constancy and extent of this phenomenon, (b) to analyze the possible alterations in the normal clotting mechanism which might explain the depression of clotting time, and (c) to determine the effects of penicillin on blood coagulation, in vitro.

The clotting response elicited by penicillin is involved in what is deemed to be a basic physiologic activity of the spleen.

The studies were carried out on volunteer human subjects who were either under treatment with penicillin or who were "normal" controls. Each patient was given a single dose of penicillin intramuscularly, and blood samples were drawn at 15-minute intervals thereafter.

The following factors were determined:

1. Coagulation time (Lee and White)
2. Prothrombin time (1. Quick--using Maltrine Thromboplastin, 2. Howells--Recalcification Method)
3. Bleeding time (Ivy)
4. Clot retraction time (McFarlane)
5. Platelet count (1. Rees and Echer, modified, direct, 2. Sanford modification of Rees and Echer)
6. Assay of plasma anticoagulant and total anticoagulant (Quick)
7. Hemoglobin (Sahli)
8. Red blood cell and white blood cell counts (Standard)
9. Serum calcium (Clark-Collip modification of the Kramer-Tisdall Method)
10. Plasma fibrinogen (Gradwohl)
11. Sedimentation rate (Wintrobe)
12. Hematocrit (Wintrobe)

The coagulation time in individuals of apparent health is constantly decreased after the administration of penicillin. This alteration in clotting time bears a specific, constant relationship to the concentration of penicillin in the blood. A definite time lag between the maximum penicillin blood level attained and the maximum diminution in coagulation time is further evident.

In experiments in which single doses of 25,000 units and 75,000 units were employed, the quantitative depression in clotting time produced was not different from that of the standard dosage of 50,000 units. However, the time-duration of the depression was directly proportional to the amount of penicillin given and the blood concentration obtained. This, then is in the nature of an all or none phenomenon varying only in the duration of its existence, and that of the presence of penicillin in the blood in effective levels.

Penicillin, when administered intramuscularly, is capable of reducing the clotting time appreciably, constantly, and maximally for a time period determined by its concentration in the blood.

To the extent that these studies have been pursued, the only demonstrable changes in the blood were the definite elevation in platelet count and a qualitative alteration in the type of platelet seen. After the administration of penicillin large, mature platelets, many of them undergoing dissolution, and many forming large clumped masses appeared in the blood. As was expected an accompanying increase in thromboplastic substance occurred. This phenomenon was indicated indirectly in these experiments by the demonstration of a decrease in the anticoagulant effect.

The abolition of this clotting time depression phenomenon in those patients without a spleen signified that penicillin must mediate its effect either directly or indirectly by stimulation of this organ. There is great similarity between the effects of penicillin and that described by Olef for epinephrine. Epinephrine is capable of emptying the blood reservoirs of the spleen and producing as a result an increase in the numbers of large platelets.

If, in these experiments, penicillin stimulated the spleen indirectly by increasing adrenalin secretion, the rise in blood adrenalin was not sufficient to alter the blood pressure or pulse rate.

The startling finding that in the test tube penicillin is an anticoagulant would seem to throw the explanation for its coagulant effect in the body even more completely on the activity of the spleen. With the administration of penicillin it must be the stimulated spleen which, by emptying itself and throwing into the blood stream immature large platelets, is able to liberate thromboplastin in sufficient quantity to swing the delicately balanced coagulation and anticoagulation mechanisms in the direction of increased coagulation. That this stimulation occurs within physiologic ranges was shown by the fact that the increase in platelets in each specific experimental instance did not go beyond the normal range.

A more exacting analysis of the mechanisms involved in the penicillin-splenic cycle seems desirable. Plans for such an analysis through animal experimentation have been made and are to be carried out. (Ohio State M. J., Feb. 1953, L. F. Moldavsky, J. H. Crowley, and W. B. Hesselbrock)

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Antibiotics in Dentistry

The antibiotics offer an increasingly provocative prospect to the dentist for the treatment of infection in the mouth and for infections associated with mouth conditions. The mouth conditions for which antibiotics have been considered range all the way from cold sores and Vincent's stomatitis, through the strictly dental diseases—caries, pulp involvement, and periodontitis—to bone conditions requiring extensive surgery and ailments related to the teeth, remote from the mouth. The antibiotics are used prophylactically for patients with a history of rheumatic fever who are undergoing extraction of teeth and as a curative measure for Ludwig's angina and osteomyelitis of the jaw.

In some instances, the literature reports only negative experimental results; in others, the reports show decided clinical successes. It must be emphasized, however, that effectiveness in the elimination of infection though the aim of the treatment, is not the most valid criterion for its approval. The first precept of good therapeutics is that the treatment should entail as little untoward effect as is consistent with the good accomplished. Because the antibiotics are far from harmless drugs, the dentist must always weigh the hazards of the medicament against the specific need and tolerance of the patient. Convenience for the dentist and spectacular results are not sufficient to justify the employment of an antibiotic.

Before administering antibiotic treatment, the practitioner must answer the following questions: Is the infection sufficiently serious to warrant the use of a drug the efficacy of which may be impaired by previous administration to the patient? Can the infection be adequately treated by other available means? Have other appropriate measures been taken? Does the specific nature of the infection indicate that the antibiotic will be effective in eliminating the causative organisms? Does the patient's previous history imply that he will suffer no serious reactions from administration of the antibiotic? Does the method of administration appropriate to the specific situation promise a safe and effective outcome? In many cases, if the dentist asked himself these questions, the answers would preclude the use of an antibiotic.

The history of antibiotic therapy is far from complete at the present time. New antibiotics are being reported at short intervals and continuing study will extend our knowledge of their pharmacology and clinical usefulness. Development of knowledge in this field may give to the antibiotics a greater latitude of indication for their employment in dentistry in days to come, but today the dentist serves his patient best by resorting to antibiotic treatment only after he has critically considered the potentialities of the drug and satisfied himself that, in the circumstances of the case, it is the medicament of choice. (J. Am. Dent. A., Feb. 1953, Editorial)

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Post-transfusion Survival of Erythrocytes Stored in a Solution of Ethylenediamine Tetraacetic Acid and Dextrose

In broad transfusion programs designed to meet defense as well as peacetime requirements, there is great need for a single preservative solution which would: (a) prolong the period during which blood may be stored, and (b) permit the collected blood to be used either for transfusion or for conversion into dried plasma without change in the current lyophilizing techniques. The late Dr. Russell L. Haden suggested that the disodium salt of ethylenediamine tetraacetic acid (Sequestrene NA2, disodium EDTA) should be evaluated to see whether its substitution for citrate might provide a partial solution to this problem. This suggestion was prompted by several observations. Dyckerhoff and his associates found Sequestrene to be

10 times more effective than citrate as an anticoagulant. Proescher reported that it was less damaging to the cellular elements of the blood in vitro and seemed to preserve them better than did sodium citrate or the oxalates. Survival of transfused red cells in recipients, however, was not described. Platelets appear to be well preserved by EDTA; Dillard and his associates used a solution of 1 gm. di-sodium EDTA and 0.7 gm. sodium chloride in 100 ml. of distilled water for collecting blood to be used for platelet transfusions, 9 parts of blood being added to 1 part of the Sequestrene solution. The authors employed the same solution as well as 4.5% di-sodium EDTA (isotonic) for collection of blood to be used for platelet transfusions. No evidence of toxicity was noted in any of these transfusions or when 20 transfusions were given of whole blood collected in a solution containing di-sodium EDTA and dextrose (1.5 gm. of di-sodium EDTA dissolved in 100 ml. of 5% dextrose for each 500 ml. of blood). As a background study for further work with di-sodium EDTA, therefore, it was necessary to determine that post-transfusion survival of erythrocytes stored in a Sequestrene-dextrose solution for 1 to 28 days was at least as good as with acid citrate dextrose (ACD) solution. The present report provides that evidence and indicates that additional observations with longer periods of storage should be made. (J. Lab. & Clin. Med., Jan. 1953, C.C. Sprague, J.B. Shapleigh, S. Mayes, R.D. Lange, and C.V. Moore)

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Intra-ocular Pressure in Primary Congestive Glaucoma

This investigation was undertaken at the Institute of Ophthalmology, London, the patients being drawn from a series of 100 individuals. All of them had glaucoma characterized by a clinical onset consisting of periodic halos, with episodes of blurred vision and ocular pain. They formed a group of primary glaucomas in the adult, defined in this article as congestive. Other characteristics of the patients in this group were described in a previous article. Narrow chamber angles, full peripheral and central fields of vision, and absence of cupping of the optic disk in the early stage of the disease were the main ocular features.

Most patients with congestive glaucoma who were examined at the Institute were at first controlled on miotics which were used on waking, before leaving home for work, at lunchtime, on arriving back home, and on retiring, making 5 instillations in all. There was good reason to think that a miotic given conventionally 3 times a day was not enough. The morning tension (before treatment) was above normal on both days when the effect of the drug instilled the previous evening wore off. Once a patient used miotics, sleep appeared to be less effective in lowering tension.

The best guide as to the efficacy of treatment in an early case may be provided by an intelligent patient who reports the occurrence or absence of

symptoms. It must be pointed out, however, that, in advanced cases, miotics occasionally mask symptoms without controlling the tension so that a follow-up examination of a patient on treatment must include Schiötz readings as well as inquiries as to the incidence of symptoms.

A majority of the cases progressed despite miotic therapy, and surgery became necessary, rarely because of a sudden acute attack, but usually because of periodic raised tension with symptoms despite miotics or occasionally because of high tension sustained throughout the 24 hours despite good miosis, excellent visual acuity, and absence of symptoms. These findings were in accordance with Reese's conclusions on the rise of base-pressure as the disease advances.

Evidence given showed that the periodic symptoms of early congestive glaucoma were always associated with raised intra-ocular pressure and that between such episodes the eye may appear healthy, react normally to all tests, produce no symptoms, and have a normal intra-ocular pressure.

The factors precipitating and relieving the attacks are discussed and described with reference to actual cases. Precipitating factors are the cinema, television, darkness, emotional crises, and prolonged visual concentration. Relieving factors are sleep, rest, daylight, miotics, a filtering operation, and iridectomy. (Brit. J. Ophth., Jan. 1953, S. J. H. Miller)

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Clinicopathologic Studies Associated With Xenon Anesthesia

The efficacy of xenon as an anesthetic agent for human beings was established and reported by Cullen and Gross 1 year ago. The potency of the gas was stated to be at least equivalent to that of ethylene.

Studies of the clinicopathologic changes associated with the commonly used anesthetic agents have been made by numerous investigators; a composite picture of the findings has been presented by Adriani, whose book contains an extensive bibliography relevant to such research.

The purpose of this study was to determine the clinicopathologic changes associated with xenon anesthesia in human beings. The rareness and cost of the gas necessarily limited the study to a series of 5 cases. All 5 patients were admitted to the hospital for elective inguinal hernioplasties and were in good physical condition except for the hernias.

The data obtained in this study indicated changes in only a few of the entities examined. Two of these changes, the decrease in platelet count and the increase in white blood cells in the urine, were attributable to causes other than the anesthetic agent.

The trend toward a relative elevation in the segmented cells in the peripheral blood during xenon anesthesia as conducted in these experiments was consistent with the findings for ether, nitrous oxide, cyclopropane, ethylene, and chloroform, as reported by Adriani. This study suggested the elevation to be relative rather than absolute.

The suggestive decrease in serum potassium which occurred during the anesthesia follows the trend of this ion during ether and cyclopropane anesthesia, as reported by Fay et al. in studies on dogs. Larson and Brewer reported a drop in serum potassium in dogs owing to administration of morphine, ether, or sodium pentobarbital; however, in view of the fact that the simultaneous administration of 2, 4-dinitrophenol prevented the fall which occurs after sodium pentobarbital is given, these authors suggested that the lowering of serum potassium by anesthetics is a result of lowered metabolic rate. Decreased metabolic activity rather than a specific effect of xenon may account for the drop in the serum potassium level.

Adriani reported a rise in plasma sugar with ether, cyclopropane, ethylene, and chloroform, and no change with nitrous oxide. In contrast to these reported changes, the evidence from this study showed no rise but rather a suggestive fall with xenon anesthesia.

There was no evidence of respiratory depression from xenon in the concentrations used. The only observed effect on the circulatory system was a tendency toward a relative bradycardia. No abnormalities of rhythm attributable to xenon were noted electrocardiographically or oscillographically.

Because statistical analyses of the data were not made because of the small series, the significances of these changes are not known.

The evidence available from this limited study indicated a minimal disturbance of biochemic and physiologic processes by xenon insofar as these processes are reflected in the entities examined. (Anesthesiology, Jan. 1953, C. B. Pittinger, J. Moyers, S. C. Cullen, R. M. Featherstone, and E. G. Gross)

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A New Water-Soluble Opaque Medium in the Study of Hysterograms and Hysterosalpingograms

Hysterosalpingography and hysterography have become accepted office procedures and have important diagnostic and therapeutic value in gynecology and the study of infertility. Numerous opaque media have been employed for this purpose and they have gone through varying stages of improvement. While a number have remained as efficient media, they have not been without shortcomings. The technical advances have eliminated the use of some of these media and have narrowed down to a few those that are accepted by technicians in the field. There still exist controversies in regard to oily and water-soluble media.

This preliminary report on the use of a new opaque medium, Medopaque-H is presented because of its encouraging results in hysterosalpingography. The outstanding feature is its remarkably rapid absorption with no residue, thus eliminating the danger of the formation of granulomatous lesions, pelvic adhesions, and irritating foci, as have been reported with oily media. One hour after the instillation of Medopaque-H, no traces could be demonstrated roent-

genographically anywhere in the pelvic cavity. While Medopaque-H does not provide as sharp a contrast as iodized oil, the authors believe that it is sufficient to demonstrate pathologic changes.

Although the series of cases presented is relatively small, this new medium has been found to be efficient, innocuous, and nonirritating. Its only disadvantage, as with other water-soluble media, is that a 24-hour plate cannot be obtained. However, the authors' technique for hysterosalpingography as described by others has been modified and the combination of the opaque medium followed by carbon dioxide insufflation under controlled pressure has been found satisfactory. The sustained pressure of carbon dioxide that forces the opaque medium through the tube is of great value. The use of this combined technique has the additional advantage of being a therapeutic measure as well, especially in cases where obstruction is found on the first attempt.

The preliminary work using Medopaque-H in hysterosalpingography also confirms the findings of other workers, i. e., obstruction at the fimbriated end of the Fallopian tube is more amenable to being made patent than that at the cornual end or mid-portion. In the near future, the authors hope to be able to report on a much greater series of comparative studies with various media in conjunction with infertility problems. (Am. J. Obst. & Gynec., Jan. 1953, M. Roland, F. Carpenter, and J. Rich)

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Uterosalpingography

Visualization of the cervical canal, uterine cavity, and tubes by uterosalpingography is a useful adjunct in diagnosing lesions of the female genital tract. The cervical canal is often obscured during uterosalpingography by the technique used, and in so doing at least half the value of the examination is lost.

The patient is draped for examination on the roentgenoscopic table. A 10-cc. Luer-Lok syringe is filled with iodochlorol and a Jarcho cannula injected until the opaque oil drips from the end, eliminating air bubbles. After a pelvic examination, a speculum is inserted and the cervix is carefully sponged with merthiolate. The cervix is seized across the top by a tenaculum and traction applied to be sure of a secure grasp. A rubber acorn is placed 1/4 inch from the tip of the Jarcho cannula (the large curve having been straightened), which is then inserted into the cervical canal. The acorn seals the external os by pressure on the cannula and traction on the tenaculum. This is maintained throughout the examination to prevent leakage and both are pulled downward to straighten the cervical canal. The speculum is removed from the vagina and allowed to rest on the cannula and tenaculum. The patient is shifted toward the head of the table and her legs extended. Under roentgenoscopic control, the iodochlorol is injected and serial films made as the cervical canal, uterine cavity, and tubes fill. The total amount of opaque oil

injected is recorded with each film. During the roentgenoscopic examination the cannula and tenaculum are moved to observed the mobility of the uterus and tubes. Following the examination, the cannula and tenaculum are removed and the patient allowed to lie on the roentgenoscopic table until the films are developed. A 24-hour study is made and if oil is present either in the pelvis, uterus, or tubes, a second film is made 7 days later. These last 2 films are an essential part of the examination and are an important aid in demonstrating patency of the tubes, hydrosalpinx, tubo-ovarian cavities, et cetera.

The best time for the examination is 7 to 14 days after the last day of the menstrual period because the uterine mucosa has sufficiently regenerated to cover the venous channels. Menorrhagia is a contraindication but bleeding from tumor is not necessarily one, if accurate localization and extent of the neoplasm is to be determined. Other contraindications are pregnancy and evidence of a pelvic inflammatory disease.

The ease and accuracy of filling by visual control under the roentgenoscope removes the danger of excess pressure. The uterus can be filled and a constant pressure of opaque oil maintained for several minutes. If there is spasm of the cornual sphincters incited by the distention of the uterine cavity, it will relax at some stage of the examination allowing the opaque oil to pass. This is especially true if an antispasmotic has been administered immediately before the examination.

In the author's series of more than 300 cases the capacity of the cervical canal, uterus, and tubes varied from 0.5 to 32.0 cc. No correlation was possible between the roentgen appearance of the cervical canal and the external appearance of the cervix. Polyposis, stenosis, and endocervicitis, could be present with a normal appearing external os and cervix. Two kinds of thickening of the internal os have been demonstrated in the course of this study. One was longitudinal striations due to hyperplasia of the longitudinal ridges and the plica palmatae. The other was polypoid thickening and was much more frequent. This last was due to polyposis and/or endocervical cysts.

Stenosis of the cervical canal and internal os may be sometimes symptomless and a definite cause of sterility. It may easily prevent the filling of the uterus and tubes unless the cervical canal is straightened by traction at the time of examination.

In the author's experience iodochlorol has proved a most reliable, stable compound. Because of its chemical stability, it is less likely to produce the reactions attributed to opaque oil in the past and has been described as the most reliable of oily media. In making examinations again 6 months or more after the first examination on patients with patent tubes, a survey roentgenogram showed no trace of iodochlorol in the pelvis. If the tubes were obstructed and hydrosalpinx or tubo-ovarian cavities were present, the opaque oil still remained in these cavities and dilatations. (Am. J. Roentgenol., Jan. 1953. T. M. Fullenlove)

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MIF Stain Technic

A recently developed MIF (Merthiolate-iodine-formaldehyde) stain-preservation technic, previously described in a preliminary note, has been further tested and utilized by the U. S. Naval Medical Research Unit #3 at Cairo, Egypt for 2 years. It has shown the following advantages over other commonly used stains: (a) simplicity and low cost of preparation, (b) rapid (almost immediate) wet-fixed staining of both cysts and trophozoites of intestinal protozoa, and of helminth ova, and (c) preservative qualities which allow field, home, or hospital ward collections of feces in the freshest possible state, i. e., before degenerative changes occur. Laboratory diagnosis may be delayed as long as 6 months or more without appreciable loss or deterioration of organisms and cellular exudate. Of particular value, fecal specimens may be collected by untrained persons and shipped to a central diagnostic laboratory for identification.

Two technics are described: one concerns the use of the "MIF stain" for direct smear identification of protozoa and helminths in fecal specimens brought to the laboratory; the other, as a preservative solution which both fixes and stains specimens collected in the field, on wards, or in the home.

Although it is planned to present details of the results of a 2-year experimental evaluation of the stain-preservative technic in a separate report, a brief summary of the findings is presented. Identification of saline, iodine, iron hematoxylin, and MIF smears (and vial specimens) from identical fecal specimens has been undertaken to determine the relative usefulness of each of the procedures for routine diagnostic work. The large number of fecal specimens examined were heavily populated with both cysts and trophozoites and represented multiple species infections.

Saline and iodine smear preparations, though simple and rapid, left much to be desired for definitive final diagnosis. The iron hematoxylin smear gave excellent results for the important objective of diagnosis, but at a costliness of time and effort, plus technical complexity. The MIF technic in contrast combined simplicity with definitive diagnosis. It is emphasized that while these conclusions held well in general, there were, of course, individual instances in which each individual type of smear preparation rendered information of utmost value.

An important point is that almost without exception examination of the MIF smear alone, gave as complete and accurate a species diagnosis as did any one or a combination of the 3 other types of smears. The results with iodine or saline smears alone fell far short for definitive diagnosis. Iron hematoxylin smears alone, on the other hand, gave results equal to those of the MIF smears save for flagellate trophozoites, large numbers of which failed to become fixed on iron hematoxylin smears. The results clearly indicate, that if as a routine, only a single smear examination is feasible in a busy laboratory, the MIF smears will render a completeness and accuracy of diagnosis with simplicity not obtainable by any other technic. The problem

of the desirability of simultaneous detection of helminth infections in which case larger amounts of feces (i. e., more than .25-1.0 gm.) may be required.

The simplicity of the method suggests that stool surveys in remote parts of the world may be made with little effort or expertness required at the point of collection, and with diagnostic study at leisure in a laboratory far distant from the region of the collection.

Another use, which the authors have tested, is the collection of relatively large amounts of feces from areas such as Egypt where a profusion of protozoal forms is obtainable from almost any rural individual. Such specimens can be mailed and have served usefully for instruction in teaching institutes.

Finally, it is interesting to report that, as an experiment, a technician who had never before examined stool was taught protozoal identification solely by the MIF technic in a relatively short time. His accuracy of diagnosis soon compared excellently with the results obtained by a more experienced technician employing saline, iodine, and iron hematoxylin smears, as well as the MIF procedure. (Research Report NM 005 050.01.03, NAMRU 3, Cairo, Egypt, Captain J. J. Sapero, MC, USN and D. K. Lawless, HMC, USN)

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Reticular Perithelioma of the Thymus

The classification of thymic tumors is a difficult problem for the pathologist. The controversy concerning the development of the thymus, the rarity of thymic tumors, and their unusual cytologic nature contribute to this confusion. Ewing stated that "No group of tumors has more successfully resisted attempts at interpretation and classification than those of the thymus." There are a number of excellent case reports and reviews of thymic tumors and valuable classifications are suggested. The difficulty of distinguishing undifferentiated epithelial tumors from mesenchymal neoplasms adds to the complexity. At present there is a tendency to regard most thymic tumors as derived from endodermal reticular cells, and one classification is based wholly on this assumption.

Many thymic tumors are described as showing "endothelial" or "perivascular arrangements" of spindle cells as well as the more definite epithelial cells. Such cases are presented by Poer, Wu, Mandlebaum and Celler, Murray and McDonald, and others. The terms "perithelial" and "hemangioendothelial" are often used to describe tumors which are otherwise obviously of epithelial origin. This admixture of cellular components would seem to make classification as either epithelial or mesenchymal impossible. Nevertheless, the recognition that some types of thymic tumor are mesenchymal in origin may help to clarify this difficulty.

Recently 7 mediastinal tumors have been studied in the Department of Pathology, Massachusetts Memorial Hospital. The cases presented a uniform structure which permitted classification as mesenchymal tumors.

These similar, benign, anterior mediastinal tumors are described and evidence presented indicating their origin from the reticular connective tissue cells of the perivascular and periseptal tissues of the involuting thymus gland. The term reticular perithelioma is suggested for these tumors because it emphasizes their most important microscopic characteristics. (Am. J. Path., Jan.-Feb., 1953, R. H Pope and R. Osgood)

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The Treponemal Immobilization Test in the U. S. Navy

In April 1951 a program was approved by the Bureau of Medicine and Surgery whereby all personnel in the U. S. Navy suspected of having latent syphilis on the basis of a positive standard serologic test for syphilis (reagin test) were required to submit serum for a treponemal immobilization test (TPI test).

With due consideration of the fact that certain aspects of the fundamental immunologic role of TPI antibody were still unresolved, it was decided that the specific occurrence of TPI antibody in syphilitic infection had been established in sufficiently numerous clinical trials to permit the result of the TPI test to be used as a diagnostic criterion for latent syphilis. Accordingly, persons showing repeated positive TPI tests were diagnosed as having, or having had, syphilis, and those with repeated negative tests as being free of syphilis.

In addition to this primary consideration, it was thought that the performance of the TPI test in the Navy would serve as a trial whereby the practicability of this test could be evaluated. Accordingly, a careful record was to be kept as to: (a) the cooperation of physicians in requesting the test; (b) the condition of sera received from the various naval stations; (c) the performance of the test by naval technicians with reference to their ability to cope with the numerous problems of the complicated test procedure. Investigations on more fundamental aspects of the TPI test were performed in conjunction with the study. These will be reported in separate articles.

Sera from 496 untreated patients with 2 or more positive standard reagin tests were examined. Of these, 211, or 42.5% were negative with the TPI test, indicating that the reagin tests in these patients represented false positive reaction. Conversely, 257, or 51.8%, were positive with the TPI test, while in 27, or 5.5%, no valid test result was obtained by the time the study was concluded. One patient, on whom it was impossible to obtain a second serum sample, was found to have a doubtful test.

Sera from 148 patients who had received therapy in the recent past because of a positive reagin test were also tested. Of this group, 26 patients, or 17.6%, had negative TPI tests. There were 19 patients, or 25%, with negative TPI tests in a group of 76 patients in whose histories it was not definitely stated whether therapy had previously been administered. It was not possible to obtain information to explain the smaller percentage of negative tests in these groups as compared with the untreated individuals.

While it is recognized that a positive standard reagin test may represent a false positive reaction when it is present during certain acute and chronic diseases, the incidence of false positive reactions in such a large and heterogeneous group as represented by the Navy would be difficult to anticipate, yet of extreme importance to determine. The present-day tendency to diagnose syphilis on the sole basis of a positive reagin test, and to treat patients without careful investigation as to the possible occurrence of false positive reactions, is unsound medical practice. With the recent work of Moore and Mohr, it is increasingly apparent that a false positive reagin test may represent an early sign of other, perhaps more serious, medical disorders which can be detected only by thorough medical and laboratory investigation. Thus, the evaluation of a positive reagin test assumes an importance beyond the possible syphilitic status of the patient. At present, the TPI test is the only practical procedure available for detecting latent syphilis with a high degree of specificity, and conversely, for detecting false positive reagin tests.

The incidence of negative TPI tests in the 496 untreated patients with repeated positive reagin tests, but with no signs or symptoms of syphilis, was 42.5%. While it is recognized that some of these represent technical false positive results of standard tests, due to faulty performance of tests performed in such a large number of laboratories as are available in the Navy, the magnitude of the problem suggests an urgent need for re-evaluation of the routine performance of reagin tests and of the interpretation of a positive reagin test in symptomless patients.

When the results of the study were obtained with sera for which the reference reagin test was the standard Kahn flocculation test in almost all instances, a similar incidence of negative TPI tests, i.e., 43% was found by Moore and Mohr in 300 patients showing positive reactions with other reagin tests, but with no other signs of syphilis. Repeated tests were performed on sera from their patients with the VDRL cardiolipin and Eagle flocculation techniques and with the Wassermann complement-fixation technique.

As a result of the study, the TPI test program has been removed from the Naval Medical Research Institute and has been established as a clinical laboratory test in other naval units. A TPI test laboratory at the Naval Medical School, National Naval Medical Center, Bethesda, Md., has been established for tests from all naval activities in the continental United States, and a naval TPI laboratory at Schofield Barracks, Oahu, T.H. has been established as a joint Armed Forces unit for tests requested by activities in the Pacific area. A third laboratory has been proposed by the U.S. Army in Germany as a joint Armed Forces unit for the European area. (Am. J. Syph., Gonor. & Ven. Dis., Jan. 1953, Lt. R. A. Nelson, Jr., MC, USNR)

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.

Nylon Prosthesis in Lesions of the Shoulder, Elbow, and Finger

The growing popularity of prosthetic reconstruction as a method of treatment for the several intractable lesions of the hip joint may be conceded. It is a trend well justified in view of the many unsatisfactory solutions offered for these lesions in the past, and the encouraging results being obtained by the new procedure.

If it is possible to replace the femoral head successfully, it seems logical that a prosthesis may be utilized in treating lesions at other joints. Certainly the replacement method warrants consideration when the surgeon is confronted with an intra-articular lesion for which, up to the present time, there has been no adequate treatment.

This report presents examples illustrating the use of the prosthetic method in the following lesions: comminuted fracture dislocation of the upper extremity of the humerus; a large bone defect of the distal portion of the humerus; and malunited "squash" fracture of the distal end of the metacarpal bone. In these cases prosthetic reconstruction offered the same advantages as when used at the hip joint. The operation is easily carried out and requires little time. Postoperative recovery is relatively painless, a factor that is of particular importance in treating a lesion in the elderly person. Motion may be started early.

Experience in the use of a prosthesis at joints other than the hip is still very limited. Such replacements have been few in number and there has not been sufficient time lapse to make late studies. However, the early results are encouraging and further investigation into the possibilities of the method is definitely warranted. (Am. J. Surg., Feb. 1953, W. R. MacAusland)

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Geriatric Amputations

A study has been completed of all primary amputations carried out on veterans, 50 years of age or over, in the Department of Veterans Affairs Hospitals during the last 5 years to determine the results of fitting artificial legs to elderly amputees. Some 110 cases are reported, the majority of whom were treated for nonservice related conditions.

The following results have been related to age, cause of amputation, and site of amputation, and the criteria used in the review of limb fitting were based on the following definitions:

Successful..... where significant use of the prosthesis was maintained for a 6 months' period after completion of limb fitting.

Failure.....where significant use of the prosthesis was not maintained for a 6 months' period after completion of limb fitting.

Not attempted.....patients considered too debilitated to attempt limb fitting.

It would appear that 80 years of age is about the limit for successful fitting, but age alone is not the determining factor. The necessity of carefully assessing physical conditions and fortitude of the patient before referral for limb fitting cannot be overemphasized. Time elements of fitting and walking training are increased 50 to 100% in this group. The oldest patient fitted was 78 years old, his amputation was the result of arteriosclerosis. He wore his limb for over 2 years before taking to a wheel chair in his eighty-first year.

The trauma cases, including accident, frostbite, and old injuries, presented few failures in limb fitting. This was undoubtedly due to better physical condition of the patient and very few complications arising from progressive degeneration or cardiac conditions.

The disease case failures were due to debility, progressive degeneration, and cardiac conditions, and, in 1 case of tumor, painful stump. The age group of these failures was mostly from 58 years upwards.

It is significant that the higher site of amputation presented more of a problem than the lower site. The double amputation fitting failures were naturally high because of the increased physical effort required.

In this statistical study, it was evident that no definite basis is possible as a guide to fitting successfully the elderly amputee, but on the other hand, the need for careful individual case study along the lines of scientific amputee rehabilitation is of paramount importance. While the trauma cases presented no particular problem, the peripheral vascular cases required a close study of reaction to the physical demands imposed.

The surgeon is often in a dilemma at making a decision as to limb-fitting such cases, because of the desire to maintain patient morale and the uncertainty of predicting results in any given case. Every amputee's first thought is how soon he may be fitted and become ambulant. Care must be exercised as to the psychologic approach to limb-fitting of the elderly amputee by all those concerned with the treatment of the case.

The response to physical build-up will materially assist in arriving at a conclusion before prescribing a limb. Graduated remedial exercises with observance to cardiac reaction should be a routine procedure. The progressive degeneration of the disease in the remaining limb may be a contraindication or delay the decision. During such treatment, a practical assessment should be made of the fortitude and determination of the patient.

The use of pylons or peg legs as a temporary measure will serve as a practical test to limb tolerance in single amputees. In the bilateral above-knee case, the use of short rocker legs is strongly recommended in the initial fitting stage. Such rockers may often provide a means of ambulation around the home where the extreme efforts required for full length legs may not be subsequently tolerated.

In the detail of this review the 65% success in fitting the disease cases was accomplished only by the closest cooperation between treatment and prosthetic services. A cautious approach must be made to the provision of an artificial limb to the vascular disease amputee and periodic check-ups should be made on all such cases fitted. (Treatment Services Bulletin, Ottawa, Canada, Jan. 1953, C. A. Bell)

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Industry's Stake in the Rehabilitation of Problem Drinkers

In general, "problem drinking" or "alcoholism" may be considered to exist for the individual when drinking results in recurrent or prolonged disturbances of physical, mental, or social well-being. More specificially, it may be considered to exist: (1) When an individual's work is materially reduced in efficiency and dependability because of drinking, and (2) When drinking is not an isolated experience but is more or less repetitive, and (3) When such drinking results in recognizable interference with health and personal relations.

From some sampling studies, it appears that roughly two-thirds of the adult population in this country drink alcoholic beverages. Of this number, approximately 3% eventually become alcoholics or problem drinkers. On this basis it has been calculated that there are at least 2 million problem drinkers in the United States.

From data accumulated by the Yale Center of Alcohol Studies, it is estimated that there are almost 4 million persons in this country in some stage of alcoholism.

The establishment of successful programs for early detection and rehabilitation of problem drinkers within a few specific industries and the subsequent publication of the favorable results obtained, have served to arouse general interest in the problem.

Alcoholism is not an acute disease with sudden onset but is a slowly progressive condition. It is not easy to recognize in its early stages unless one is looking for it and conditioned to recognize the early signs and symptoms. The alcoholic does not become rehabilitated nor is his problem ever solved by disciplinary measures alone. The Yale School of Alcohol Studies has determined that the true addictive drinker develops over a period of approximately 10 years. The average alcoholic is recognized as such when he is somewhere between the ages of 35 and 55 in 80% of the cases—in other words, in an age group which is ordinarily the most productive time in one's life. About three-fourths of all alcoholics in the United States are men and fall in this age group. Alcoholism or addictive drinking is more than five times as prevalent in males as in females. Only about 20% of all alcoholics are the down-and-out derelicts of skid row, easily recognizable as such by almost anyone.

On the basis of data compiled by the Yale School of Alcohol Studies, the male alcoholic in industry in addition to an average loss of 22 working days annually from the acute affects of alcohol alone, also loses 2 days a year

more than does the nonalcoholic because of other ailments not directly due to his alcoholism. He is also responsible annually for approximately 1,500 fatal accidents at work.

Industry, therefore, has a tremendous stake in the early detection of alcoholism among the individual employees. But such detection will not be accomplished unless there is a well-delineated plan for their rehabilitation. The one is dependent upon the other, for unless the workers as a group and their immediate supervisors are convinced that the purposes of early detection are only for attempted rehabilitation, there will be no early detection. (Indust. Med. & Surg., Jan. 1953, G. F. Wilkins)

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Use of a Lozenge to Curb Smoking Appeal

There have been a number of attempts in the past to develop a means to stop smoking. The simplest method is will power. However, as in every addiction, this is very difficult in most cases. Sociologic and psychiatric help are beneficial, but it appears that medical aids are essential as well.

While observing the results of a medicated lozenge (Flavette) used to curb the appetite for food, it was noted that many of the patients were smoking less. Further investigation was therefore undertaken.

A series of 349 patients took the lozenges for the specific purpose of stopping the use of tobacco. Smoking appeal was effectively reduced in 265 cases (77%). This compares favorably with the use of the lozenges in curbing the appetite, where they were effective in 80% of 568 cases. In 36 control cases, using placebos, only 7 persons were successful in their efforts to stop smoking, and these by sheer will power. Also, in a sense, all of the 349 patients were their own controls; they had previously tried unsuccessfully to stop smoking.

The desire to have something in the mouth is part of a fundamental instinct, and smoking is one of its many manifestations. In all of these, taste is very much involved. The craving to smoke is undoubtedly associated with taste appeal as well as the particular aftertaste. The lozenges seem to curb this taste appeal for smoking.

The desire to have something in the mouth is an important reason why eating is undertaken more vigorously when smoking is withdrawn. Because of this, obesity may become a problem and the lozenges by curbing the appetite as well as curbing smoking appeal, are doubly useful.

Each 5-grain lozenge contains benzocaine (1/20 gr.) and is flavored with saccharin, extract of licorice, powdered ginger, and oils of anise, wintergreen, peppermint, coriander, and cloves. The safety of this medicament was emphasized in previous articles, where it was pointed out that even if an entire bottle of 63 lozenges was accidentally taken at one time, only 3 grains of benzocaine would be ingested. The physiologic dose of benzocaine is 5 to 9 grains.

The amount of benzocaine is so small because it is used only for its delaying action on absorption of the flavoring extracts, rather than for any physiologic anesthetic action. The safety of this medicament further makes it possible for a patient to take it frequently and as often as necessary.

To curb smoking, it is suggested that a lozenge be placed on the tongue every time there is a desire to smoke. In the 349 cases, an average of 5 lozenges was taken daily, though some patients took as few as 3 and others as many as 15. No untoward results were noted. This procedure was followed whether for abrupt or for gradual cessation of smoking. The lozenges are of further benefit in that after a person has stopped smoking, he can take one on occasion, as the desire to smoke returns. (GP, Feb. 1953, W. L. Gould)

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Terramycin by Hypodermoclysis

Terramycin subcutaneously is a useful and previously unreported mode of parenteral broad-spectrum antibiotic therapy. The discovery and development of aureomycin, chloramphenicol, and terramycin have offered additional anti-infectious agents of wide range, high potency, and low toxicity. They can be conveniently administered by mouth as they are well absorbed through the intestinal tract. In addition, preparations of terramycin and aureomycin are commercially available for intravenous use. Their general usefulness, however, has been somewhat curtailed for want of a more easily administered form for parenteral use.

In the management of many infants and children, oral medication may not be feasible, frequently unwise, and sometimes, as in the surgical patient, contraindicated. If administration by vein is technically difficult or if adequate personnel or equipment is not readily available, the physician is faced with practical difficulties in the proper care of his patient. He may be forced to turn to penicillin or streptomycin which can be given intramuscularly, even though the broad-spectrum antibiotic has been shown to be the drug of choice either by clinical response or by appropriate bacterial sensitivity testing. This report, describing the use of terramycin by the subcutaneous route, is presented primarily as a practical aid to the practicing physician when such situations arise.

In preparation for therapeutic trial, a group of children were given terramycin in increasing concentrations and in various single doses to determine the degree of local tolerance and the level of the antibiotic obtained in the blood serum. These children were free of renal or cardiac disease. The patients included in the clinical study were routine admissions to the ward and private pediatric service of St. Michael's Hospital.

Successful preliminary trial and extensive clinical use has demonstrated the safety and efficacy of this method of administering terramycin. The satisfactory response obtained in a variety of common infections is reported. Terramycin serum levels were performed following various single doses to confirm its rapid entrance into the blood stream and to aid in establishing a proper dosage regimen. Data demonstrating the biological compatibility of this antibiotic with hyaluronidase are included. Terramycin may be added to physiological saline, dilute dextrose solution, or to 1/6 M sodium lactate and Darrow's solutions when they are needed for electrolyte repair.

It is recommended that a terramycin concentration of 1 mg. per cc. be routinely employed with a dosage of 10 mg. per kg. body weight every 12 hours in average infections; in more serious conditions, higher dosages of 20 to 25 mg. per kg. every 8 to 12 hours may be necessary. (J. Pediat., Feb. 1953, W. J. Farley and L. Konieczny)

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Fifth Annual Navy Industrial Health Conference

The Fifth Annual Navy Industrial Health Conference will be held in Los Angeles, Calif., 17-23 Apr 1953. Medical officers at field activities which are required to submit the Industrial Health Report Form NavMed 576a are urged to begin acquainting their commanding officers of the importance of their commands being represented at this Conference. Letters announcing the Fifth Annual Navy Industrial Health Conference have been sent to the Chiefs of the Bureau of Ships, Bureau of Aeronautics, Bureau of Ordnance, Bureau of Supplies and Accounts, and Bureau of Naval Personnel to provide them the necessary information for their letters to the commanding officers of their field establishments. It is probable that there will be some delay before these letters of other Bureaus reach the field. Medical Department personnel and others may be desirous of consummating plans for attending this year's Conference in advance of the receipt of the official notification from the various Bureaus.

It is emphasized that travel funds for officers and civilians must be provided by either the local commands or the Bureau having management control of the command.

The office of the Secretary of the Navy and the comptroller's office of the Bureau of Supplies and Accounts have advised that this Conference being a Navy Conference, the signature of the Secretary of the Navy on TAD orders will not be necessary.

The National Industrial Health Conference is being held at the same time and place as is the Navy Industrial Health Conference. Thousands of doctors, nurses, and industrial hygiene engineers from all over the United States will be in Los Angeles attending the national meeting. It is advisable therefore that Navy personnel make hotel reservations early.

Mail reservation requests to Industrial Health Conference, Housing Bureau, Philip A. Harrigan, Los Angeles Convention and Visitors Bureau, Los Angeles Chamber of Commerce, 1151 South Broadway, Los Angeles 15, Calif. It is suggested that you list three hotels in the order of your preference.

Headquarters Hotel	Single	Double	Twin
Statler	$6.50-$14.00	$ 9.00-$14.00	$11.50-$16.00
Other Hotels convenient to Headquarters Hotel:			
Biltmore	$7.00-$11.50	$ 9.50-$14.00	$10.50-$14.50
Clark	4.00- 6.00	5.00- 7.00	6.00- 8.00
Ambassador	8.00- 17.00	11.00- 20.00	11.00- 20.00
Alexandria	4.00- 8.00	6.00- 9.00	7.00- 10.50
Mayfair	4.50-up	6.50-up	7.50-up
Commodore	3.50-up	5.00-up	6.00-up
Hayward	4.00- 6.00	5.50- 7.00	6.50- 8.00
Savoy	4.00- 5.00	5.00- 6.50	5.50- 6.50
Lankershim	3.50- 5.00	5.00- 6.50	6.00- 7.50
Mayflower	5.25- 8.00	5.25- 8.00	5.75- 9.00
Gates	3.00-up	3.50- 6.00	3.50- 6.00
Rosslyn	4.00- 6.00	5.00- 8.00	6.00- 10.00
Ritz Flower	4.00- 5.00	4.00- 5.00	5.00- 6.00
San Carlos	3.50- 5.00	3.50- 5.00	5.00- 6.00

Copies of the 1953 Navy Conference Program will be enclosures to the letter that Bureaus and Offices will send to their respective field establishments.

A brief review in advance may be helpful to those desiring to approach their commanding officers prior to receipt of the official letter. This year, as in the previous years, the Conference will be a practical training Conference.

A symposium on "Industrial Noise and Hearing" will be held on Saturday morning, 18 Apr 1953. The symposium will be conducted by a panel consisting of naval medical personnel and a series of lectures by five guest speakers. Tuesday and Wednesday, 21-22 Apr 1953, there will be classroom instruction (supervised by the guest speakers) in the use, standardization, and processing of sound level and audiometric equipment.

The guest speakers, Dr. Gordon Hoople, University of Syracuse, Dr. Howard P. House, University of Southern California, Dr. C. Steward Nash, University of Rochester, Dr. Aram Glorig, Walter Reed Army Medical Center, and Dr. Douglas Wheeler, Los Angeles, Calif., are members of the National Research Council's Committee on Noise in Industry, and are recognized authorities on the subject "Noise in Industry."

The information to be gained from this symposium and classroom instruction will be used for the development of control measures and policies re industrial noise that will be in the best interest of the government and employees.

The regulations of the Civil Service Commission and the Bureau of Employees Compensation, related to the operation of the civilian health program, are numerous and complex. Panel discussions, with adequate time allowed for questions from the floor, will be of tremendous assistance to the Medical Department personnel. The Medical Directors of the Civil Service Commission and the Bureau of Employees' Compensation respectively will lead these panels as guest speakers.

Two industrial hygiene panels have been arranged. They will be concerned with know-how on industrial health hazards that are every-day problems in Navy establishments. In addition to the Navy Industrial hygiene engineering personnel, Dr. John Foulger, Director of Medical Research, DuPont Company, will appear. This year the panel in which Dr. Foulger will participate will include practical information on the handling, use, and control of industrial solvents and oils, as well as a review of the important facts on explosives. (PrevMed Div., BuMed)

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Submarine Medicine Training Course

Applications are desired from regular or Reserve medical officers of the rank of LCDR and below for a course of instruction in submarine medicine. The course, consisting of 2-1/2 months at the Experimental Diving Unit, U.S. Naval Gun Factory, Washington, D.C., and 6 months at the Submarine School, U.S. Naval Submarine Base, New London, Conn., commences twice annually on the fifteenth of April and October

Quotas currently exist for the April 1953 and October 1953 classes. Applicants must be physically qualified in accordance with Articles 15-29 and 15-30, Manual of the Medical Department, and completed Standard Form 88 should accompany the application. Applications should include the service agreement required by BuMed C/L 52-33. Requests for the course commencing 15 Apr 1953 should be submitted by air mail or dispatch.

Radical changes in future submarine design, advancing operational developments within the submarine service, and improvements in the technique of submarine escape, deep-sea diving, and underwater demolition activities, all present many intriguing physiological, psychological, and human engineering problems which constantly challenge solution by diversified types of medical research.

Generally, on completion of training, graduates are assigned to a 2-year tour of sea duty as staff medical officers to the various submarine squadrons located at Pearl Harbor, San Diego, New London, Norfolk, or Key West. Qualification to wear the submarine medical insignia can then be met upon

completing 1 year of such an assignment and upon fulfillment of the requirements of BuPers Manual, Article C-7309. Subsequent assignment to shore duty may or may not include duty at submarine, diving, or other medical research activities depending upon the desires of the individual and the needs of the service. Many of these assignments, both ashore (including portions of the training period) and afloat, entitle the incumbent to extra compensation.

Although it is desired that graduates of this course devote at least one or two assignments within this specialty, it is not the intent of the Bureau to confine their future career patterns solely within the sphere of submarine medicine or medical research. For those who select such a career, the future progress of the submarine service offers rewarding opportunities. For others who desire transfer to other fields of medicine or surgery, appropriate consideration will be given toward the implementation of their requests. (SubMed Div., BuMed)

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Homologous Serum Jaundice and Hepatitis Occurring in Recently Tattooed Personnel

Reports of tattooing as a possible means of transmitting homologous serum jaundice and hepatitis are increasing in the literature. The following reports are considered useful as guides for field investigation of this problem.

"Homologous Serum Jaundice Transmitted by a Tattooing Needle," by R. H. Roberts, Surgeon Lt. Commander R. C. N., and Hereford Still, M. A., Surgeon Lieutenant, R. C. N. (R), Halifax, Nova Scotia, published in the Canadian Medical Association Journal, Vol. 62, No. 1, pp. 75-78, Jan. 1950.

"Occurrence of Hepatitis in Recently Tattooed Service Personnel," by Ballard F. Smith, M. D., Boston, Mass., published in J. A. M. A., Vol. 144, No. 13, pp. 1074-1076, 25 Nov. 1950.

"Tattooing as Possible Means of Transmitting Viral Hepatitis," by A. C. S. Hobson, M. C., Lt. Col., R. A. M. C., D. E. Frasher, M. B., Capt., R. A. M. C., and the late N. H. Newman, M. B., Capt., R. A. M. C., published in Brit. M. J., No. 4768, pp. 1111-1112, 24 May 1952.

A record of the incidence of tattooing in 143 cases of viral hepatitis among service personnel admitted to a military hospital in Hong Kong, during a 6-month period, revealed that 56 (39.1%) were tattooed 51 to 150 days beforehand, as against 16 (10.5%) of 152 control cases.

The difference in percentages is statistically significant, suggesting tattooing as a possible means of transmission of hepatitis virus from one subject to another. (PrevMed Div., BuMed)

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From the Note Book

1. Rear Admiral Lamont Pugh (MC) USN, Surgeon General of the Navy, addressed the Seventieth Annual Convention of the Minnesota State Dental Association on 25 Feb 1953, at Minneapolis, Minn. The Surgeon General's address was entitled "Navy Dentistry Afield." On the evening of 26 Feb the Surgeon General was the principal speaker at the "Kick-Off" meeting of the 1953 fund-raising campaign of the Chicago Chapter of the American Red Cross. (TIO, BuMed)

2. Rear Admiral Ralph W. Malone (DC) USN, Inspector General (Dental), represented the Chief of the Dental Division, Rear Admiral D. W. Ryan at the presentation of the Pierre Fauchard Academy's Gold Medal award of 1952 on 7 Feb 1953, at Chicago, Ill. The Pierre Fauchard Medal was presented to the dental officers serving in the Armed Forces in recognition of unusual outstanding and distinguished services to the nation and to the dental profession. The award consists of a gold medal which will be retained in the office of the Secretary of Defense. A facsimile was presented to the Chief of each of the dental services. (TIO, BuMed)

3. Six hundred and eighteen cases of "idiopathic detachment of the retina" are discussed and analyzed in Archives of Ophthalmology, Jan. 1953, T. R. Smith and L. H. Pierce.

4. The February 14, 1953 issue of the Journal of the American Medical Association contains 2 reports of agranulocytosis following the use of Butazolidin and 1 report of a reaction of chills, fever, and generalized eruption of skin, mucous membranes, and conjunctiva.

5. Control efforts have reduced the incidence of venereal diseases noticeably in recent years but the problem is far from being completely solved. During 1951 Ohio reported 7,129 new cases of syphilis, 8,126 new cases of gonorrhea, and 99 new cases of other venereal diseases, a total of 15,354 cases. (Ohio State M. J., Feb. 1953, F. O. Hehker)

6. An intravenous solution is discussed which has the following advantages: No clumping is caused when administered with blood, the patient's caloric requirements are better met than with saline solutions, and the patient is spared the extra burden of sodium chloride. (Anesthesiology, Jan. 1953, D. F. Buschle and M. Saklad)

7. There are several procedures available for the surgical management of acquired valvular lesions. It is the author's belief that a careful evaluation of the patient's over-all status in arriving at the decision for or against operation is a prime factor in the ultimate outcome. (GP, Feb. 1953, C. A. Hufnagel)

8. A symposium on epidemic hemorrhagic fever appears in the Annals of Internal Medicine, Jan. 1953.

9. The diagnosis and results of cervical sympathectomy in post-traumatic brain atrophy is discussed in The Military Surgeon, Feb. 1953, A. Stowell.

10. A symposium on epileptic disorders presenting in a simple manner certain known facts which are becoming of increasing importance to every physician appears in the Proceedings of the Staff Meetings of the Mayo Clinic, 28 Jan 1953.

11. The incidence, etiology, and treatment of aerotitis media and new data are presented in Annals of Otology, Rhinology and Laryngology, Dec. 1952, Capt. R. W. Hyde, USAF (MC).

12. The general principles used in the treatment of anterior and posterior nose bleeding appears in Archives of Otolaryngology, Jan. 1953, H. H. Beinfield.

13. The salient features of malignancies of the small intestine are discussed and analyzed both pathologically and clinically in the American Journal of Surgery, Feb. 1953, D. J. Locke.

14. The use of the roentgen ray in the diagnosis and therapy of faulty ovulation is discussed in the American Journal of Roentgenology, Radium Therapy, and Nuclear Medicine, Jan. 1953, W. W. Williams.

15. An interesting report of multiple screening examinations in a group of 583 supposedly healthy persons over the age of 45 years appears in the New England Journal of Medicine, 29 Jan 1953, R. P. McCombs and J. J. Finn, Jr.

16. Scalp clamp traction in a series of cases was ineffective in stimulating uterine activity in normal labor, uterine inertia, or in the induction of labor. (Am. J. Obst. & Gynec., Jan. 1953, L. H. Douglass, R. A. Gilbert, D. F. Kaltreider, and H. B. McNally)

17. The influence of the administration of ACTH and cortisone on a circulating anticoagulant appearing after repeated transfusions in a hemo-

philiac is reported in Blood, Feb. 1953, S. Van Creveld, P. G. Hoorweg, and M. M. P. Paulssen, Amsterdam, Holland.

18. The American College of Radiology recently conferred the degree of Fellowship on Rear Admiral Charles F. Behrens (MC) USN, and, an Associate Fellowship on Commander Frances W. Chambers, Jr., MSC, USN. (TIO, BuMed)

19. Lieutenant R. J. Leffler (MC) USN has recently been certified in Pathologic Anatomy by the American Board of Pathology. (TIO, BuMed)

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BUMED INSTRUCTION 6700.1 2 Feb 1953

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical/Dental Personnel Regularly Assigned

Subj: Medical and dental equipment; maintenance and repair program

1. This instruction provides information concerning the employment of Medical Repairmen (MRM) and Dental Repairmen (DRM), and furnishes instructions relative to the procurement of spare parts and tools as required. BuMed C/L 50-9 and 49-161 are cancelled.

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BUMED INSTRUCTION 1500.1 6 Feb 1953

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals, Hospital Ships, Hospital Corps Schools, Naval Medical School, Naval Dental School, and Naval School of Hospital Administration

Subj: Training aids officer; appointment of

1. Commanding officers are requested to designate an officer as training aids officer who shall insure that the required audio and visual training aids are made available and properly utilized in the various training programs. BuMed C/L 45-100 is cancelled.

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BUMED INSTRUCTION 6250.2 9 Feb 1953

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Disinsection of naval vessels and aircraft

Ref: (a) GO No. 20, Quarantine Regulations for Vessels and Aircraft of the Armed Forces

1. This instruction promulgates approved procedures and materials for the disinsection of naval vessels and aircraft. BuMed C/L 51-11 is cancelled.

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BUMED INSTRUCTION 6530.1 9 Feb 1953

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Corps Personnel Regularly Assigned

Subj: Blood, Bureau policies regarding procurement of for persons under treatment in Navy Medical Department facilities and other matters of concern relevant to blood transfusions

Ref: (a) Department of Defense directive of 5 May 1950 concerning policies and guidance of the Whole Blood and Blood Derivatives Program
(b) Title 24 U.S.C. 30

1. This instruction revises and reissues information concerning the Bureau's policies with regard to the procurement of blood. BuMed C/L 46-133 and 50-111 are cancelled.

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BUMED INSTRUCTION 6320.6A 9 Feb 1953

From: Chief, Bureau of Medicine and Surgery
To: Comdts., Naval Districts and River Commands

Subj: Medical services for naval personnel attached to Naval Reserve Officers Training Corps Units

Ref: (a) BuMed Circular Letter No. 52-15
(b) Chapter 20, ManMedDept

1. This instruction establishes a procedure for medical care of naval personnel attached to Naval Reserve Officers Training Corps Units. BuMed Instruction 6320.6 is cancelled.

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BUMED INSTRUCTION 6710.2 12 Feb 1953

From: Chief, Bureau of Medicine and Surgery
To: Commanders in Chief, Naval Force Commanders, Commandant Marine Corps, Commandants Naval Districts and River Commands, Chief Naval Air Training Command, and Chief Naval Airship Training and Experimental Command

Subj: Prescribing and dispensing of certain antibiotics by Hospital Corps personnel on duty independent of a medical or dental officer

Ref: (a) Art. 3-33(1), ManMedDept
(b) BuMed Inst. 6222.3

1. Except under extreme emergency, aureomycin, terramycin, and penicillin should not be prescribed nor administered without a specific order or directive of a medical or dental officer for each case to be treated. The provisions of ref. (b) remain in effect. Streptomycin, dihydrostreptomycin, and chloramphenicol (chloromycetin) should not, under any circumstances, be prescribed nor administered without a specific order or directive of a medical or dental officer for each case to be treated.

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BUMED INSTRUCTION 4441.1 16 Feb 1953

From: Chief, Bureau of Medicine and Surgery
To: Commandants, Naval Districts (less 10, 15, and 17), Commandant, Potomac River Naval Command, Medical and Dental Supply Officer, Naval Medical and Dental Supply Office, Commanding Officers, Naval Medical and Dental Supply Depots

Subj: Medical initial outfitting lists for Naval Reserve training activities (less aviation)

Ref: (a) BuMed Inst. 6750.1A
(b) Art. 25-21(11), ManMedDept

1. This instruction provides information concerning authorized medical initial outfitting lists (commissioning allowance lists) for all Naval Reserve training activities, less aviation. BuMed C/L 49-115 and 50-55 are cancelled. Enc. (1) of 49-115 shall be brought forward and made enc. (1) of this instruction.

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Navy Medical School, National Naval Medical Center, Bethesda, 14, Maryland, giving full name, rank, corps, and old and new addresses.

PREVENTIVE MEDICINE SECTION

Preventive Medicine Unit Activities

U. S. Navy Preventive Medicine Unit No. 2, Naval Base, Norfolk, Va., reports that in the last calendar year it has responded to many requests for assistance from activities within the district, especially on problems relative to agencies outside the naval establishment, i. e., civilian food-handling establishments, dairies, bathing sites, et cetera. Where it was not possible to use military personnel in the investigations, the problems were referred to the proper civilian agency or agencies. Requests for services concerning problems within a command were usually of an epidemiologic nature.

The Unit also reports that excellent liaison exists between its activity and the sister services, the U. S. Public Health Service, Federal Food and Drug Administration inspectors, State and local health agencies, and educational institutions. Many problems of mutual interest have been resolved because of this cooperation and much duplication of services avoided. For example, inspections of dairy plants have been divided equally among veterinary inspectors of the Air Force and Army and Navy milk sanitation officers.

Tuberculosis Control

A Preliminary Report on the Tuberculin Testing of Medical Department Personnel

During 1952 a tuberculin test was made on 9,174 medical and dental personnel on duty at, or reporting to continental naval hospitals for staff duty. The health records of these individuals contained no report of a prior positive reaction since entering the naval service.

It was found that of this group tested, 70.3% were negative to the "single-test" dose. This figure would seem to be higher than one might expect when it is noted that over one-quarter of the group were doctors, dentists, and nurses.

During the same period those individuals who were found to be negative reactors and were assigned duties on wards caring for tuberculous patients or suspected tuberculous patients were retested with the same "single-test" dose at various specified periods. There were 1,513 such retests made. It is noted that 5.8% of those retested converted to a positive tuberculin reaction. If it is considered that the so-called doubtful reactions may be a latent manifestation of tuberculin sensitivity these must be added to the group of converted individuals. This results in a total of 9.3% who developed a positive tuberculin reaction during 1952. This figure is considerably lower than that found in many studies of general hospital personnel throughout the country where conversion rates were noted to be as high as 39.2%.

Even though the conversion rate for Medical Department personnel of the Navy seems to be comparatively low, it is still considered to be highly advisable that vigilance be continued in the search for unknown cases of tuberculosis. This can be accomplished by the routine examination of the chest of every hospital admission by the photofluorographic method and by the continued periodic retesting of those negative reactors who are by virtue of their duties caring for patients who might be suspected of being tuberculous.

Insect and Rodent Control

Changes in Mosquitoes on Guam

Aedes aegypti mosquitoes were highly prevalent on Guam in 1944 and 1945, and contributed to serious manpower loss through transmission of dengue fever. This mosquito, because of its domestic breeding habits, was apparently eradicated by an intensive but economical attack on rain-barrel breeding, using DDT-treated burlap for rain-barrel covers. This control operation was directed by LCDR Stanley F. Bailey H(S) USNR during 1945. In 1945 Bailey and Bohart found no Aedes albopictus or anophelines of any species on the island.

In 1948 the 207th Malaria Survey Unit, U. S. Army, found a small infestation of Anopheles subpictus indefinitus (Ludlow) on the east coast of Guam. This is a native of the Philippines, and because of its location away from airfields, but in an area used by landing ships in practice exercises, is believed to have been imported by ship from the Philippines. The same unit found A. albopictus in four collections. This is a wild mosquito found in numerous islands of the central Pacific and elsewhere, but never before on Guam. It is closely related to A. aegypti and is capable of transmitting the same diseases. Only a single specimen of A. aegypti was found in 1948.

In 1949, no A. aegypti were found by Reeves and Rudnick, but A. albopictus was taken in 119 collections, and Anopheles subpictus was found throughout the island from Tumon Bay south, indicating marked spread in the intervening year. In 1951, LT W. B. Hull (MSC) USN made an intensive search for A. aegypti and found none. A. albopictus, however, was now disseminated throughout the island, and had taken the place of A. aegypti in rain barrels, tin cans, and auto tires, as well as retaining its original wild habitat of tree holes, cut bamboo, and ground pools, This wild breeding habit makes it a far more difficult species to eradicate than its predecessor, the strictly domestic A. aegypti. The eradication of A. aegypti, therefore, has been more than offset by introduction of its wild cousin.

Hull also found Anopheles subpictus breeding heavily in several areas, chiefly in ground pools where as many as 100 larvae per dip were taken. This species has several subspecies elsewhere, some of which are known to transmit malaria. The subspecies indefinitus has not been found biting man in nature but has been induced to do so in the laboratory. This preference for animal blood is probably an indication that it will not be an important vector of malaria on Guam; nevertheless, the introduction and strong establishment of one species of Anopheles emphasizes again the urgency of guarding against introduction of malaria vectors by either ship or air. (Based on a report of mosquitoes on Guam by LT W. B. Hull (MSC) USN)

General Sanitation

Investigation of Food-borne Outbreaks of Acute Gastroenteritis

"Food poisoning and food infection, two disease groups characterized by acute gastroenteritis, have replaced the typhoid-paratyphoid group of enteric fevers as the most common food-borne gastrointestinal diseases," according to an article by Milton Feig, M. D., in the December 1952 American Journal of Public Health and the Nation's Health. The following information is excerpted from the article, which cites some of the problems and methods of investigating outbreaks:

"The primary purpose of the investigation of these outbreaks is the prevention of subsequent occurrences..... Briefly, it may be stated that the great

majority of food-borne gastroenteric outbreaks will be due to Staphylococcus enterotoxin. . . . . It is chiefly by such study that many of the most appropriate specific preventive recommendations can be applied; for example, by finding the individual with superficial skin, eye, ear, nose, and throat infection who is proved to be the responsible carrier in Staphylococcus enterotoxin outbreaks; or the establishment of the human Salmonella or Shigella carrier in the infectious outbreaks and the determination of subsequent carriers among those ill as a result of the outbreak. Also, the use of originally infected foods may be determined, such as in the case of Salmonella-infected fowl. . . . .

"Investigation should be directed toward: 1. Determining the responsible meal. 2. Establishing the food item or items responsible for the outbreak. 3. Determining the specific nature of the infection or contamination. 4. Determining the method and source of contamination. 5. Using the opportunity afforded by the investigation to instruct all groups and individuals contacted in the proper handling and preparation of foods."

Detailed suggestions for conducting the investigation toward these ends are given in the article, reprints of which are soon to be forwarded to all ships and stations having a Medical Department representative on board. In the meantime it is hoped that this information will aid those charged with the responsibility of investigations of food-borne outbreaks of acute gastroenteritis.

Attention is also invited to Advance Change 2-2, dated 30 January 1953, which changes article 23-122, Manual of the Medical Department; it will give details for epidemiologic reporting of enteric diseases.

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NSF Standard No. 2 Completed

The second in the series of standards set up by the National Sanitation Foundation for the design, installation, and operation of equipment having a bearing on the health of the public has just been published. Completion of the first set of standards, on soda fountain and luncheonette equipment, was announced in Vol. 20, No. 6 of the Medical News Letter. The second set, entitled "Food Service Equipment," applies to new equipment only and covers "kitchen, bakery, pantry and cafeteria units such as tables of all kinds and their component parts, counters, shelves, sinks and hoods, but excludes utensils, ranges, refrigerators and mechanically operated equipment such as dishwashers." The first two sets of standards will be distributed soon to appropriate bureaus, commandants of naval districts and river oommands ashore, and fleet, force and type commanders afloat. A third set, soon to be published, will be on dishwashing equipment.

The "Food Service Equipment" standard was prepared through the coordinated efforts of a Joint Committee on Food Equipment Standards, an Industry Task Committee, and a Council of Public Health Consultants. Collaborating committees represented the U. S. Public Health Service, the International

Association of Milk and Food Sanitarians, the National Association of Sanitarians, the Conference of State Sanitary Engineers, and the American Public Health Association.

"The adoption of this and other standards of the series," declared Dr. Henry F. Vaughan, NSF President, in the preface, "offers public health officials an opportunity to present a united front in securing the basic equipment to made safe and clean food service possible as demanded by the general public. It gives users of such equipment the assurance of meeting reasonable health standards and passing inspection. Furthermore, these standards give manufacturers the advantage of applying uniform construction methods with confidence that equipment conscientiously built to meet these standards will be generally acceptable.

"Finally, as an aid to all concerned in recognizing approved equipment, the National Sanitation Foundation has established a policy under which the use of its insigne, NSF, will be authorized on equipment of types that meet the standard herein established for food service equipment.

"Permission to use the National Sanitation Foundation seal of approval will be by contract, after formal application by the manufacturer. Such contract may be awarded after an investigation of the applicant's manufacturing methods and, where necessary, tests of equipment show compliance with the standard. Continuance of the contract is dependent upon continued evidence of compliance with the standard upon periodic re-examinations of equipment at the factory and in the field."

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PHS Milk Ordinance and Code

"Milk Ordinance and Code, 1953 Recommendations of the Public Health Service" is the title of the new edition of the former "Milk Ordinance and Code Recommended by the U. S. Public Health Service." The new ordinance will be published about the middle of March. Please do not request this publication from the Public Health Service. The Bureau of Medicine and Surgery will distribute it to all BuMed activities that require it.

The most significant changes in the 1953 edition are as follows:

"1. The 1952 edition is a compulsory pasteurization ordinance; however, for the benefit of those communities which still find it necessary to permit the sale of raw milk, there is presented at the end of the ordinance proper a list of changes to be made if the sale of 'Grade A Raw Milk' is to be permitted under Section 8.

"2. Both a 'degrading' and a 'permit suspension' form of the ordinance are presented.

"3. The code portion of the 1952 edition has been simplified and clarified by the transfer to appendices of most of the detailed explanatory and instructiona material. The code is now limited to material which relates only to 'satisfactor compliance.'

"4. Definitions are included in Section 1 for such milk products as concentrated milk, concentrated milk products, half and half, whipped cream, nonfat milk, skim milk solids, nonfat dry milk solids, dry milk, flavored milk, flavored drink, cultured buttermilk, cultured milk, cottage cheese and creamed cottage cheese. Except for skim milk solids, nonfat dry milk solids and dry milk these products are now subject to grading. However, cottage cheese and creamed cottage cheese may be exempted from grading by those communities not in position to require grading of these products at this time.

"5. Reconstituted milk or reconstituted skim may be used in the manufacture of cultured products, such as cultured buttermilk, cultured milk, cottage cheese, and creamed cottage cheese, without the labeling of these products as reconstituted.

"6. Milk haulers are defined in Section 1, and are required under Section 3 to obtain permits.

"7. Section 2 authorized the sale of ungraded pasteurized milk during an emergency.

"8. Section 4 no longer requires that placards showing the grades of milk sold be displayed in restaurants, soda fountains, etc.

"9. If adopted locally, a footnote to Section 5, permits official acceptance of industry inspection of producer dairies as a supplement to official inspection, provided such inspections are checked periodically and found satisfactory.

"10. Section 6 provides that the results of industry laboratory examinations of raw milk for pasteurization may be accepted, provided such results are checked periodically and found satisfactory.

"11. Only plate counts or direct microscopic counts are recognized by Section 6 of the new edition, but by adoption of footnotes the use of reduction tests is authorized. In this connection, the reduction test standards specified in the footnote have been changed somewhat from those contained in the 1939 edition.

"12. Section 6 permits the use of a compliance standard of 3 out of 4 samples as an alternate to the logarithmic or arithmetic average methods. Communities wishing to use this method are required to make the necessary changes at the time of adoption by insertion of wording contained in a footnote.

"13. Section 10 permits milk served at hospitals and institutions, as well as milk used for mixed milk drinks, to be poured from quart or 2-quart containers packaged at a milk plant.

"14. Under Section 11, milk and milk products from distant points may be accepted if the sources rate 90 percent or more, or if the sanitation compliance rating is equal to or above that of the local supply.

"Changes have also been made in requirements governing Grade A raw milk for pasteurization and in requirements for Grade A pasteurized milk."

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Sanitation Compliance Ratings of Interstate Milk Shippers

The Public Health Service, Federal Security Agency, has published the December 1, 1952, Sanitation Compliance Ratings of Interstate Milk Shippers. These ratings are based on the requirements of the Milk Ordinance and Code Recommended by the U. S. Public Health Service (1939 Edition), and were made in accordance with the procedures set forth in "Methods of Making Sanitation Ratings of Milk Sheds," Reprint 1970 from the Public Health Reports of August 12, 1938. The December list supersedes all lists previously issued, and all such lists and supplements are therefore void. Supplements to this list will be published from time to time, the next complete revision being scheduled for June 1, 1953.

Navy milk sanitation coordinators who have not received copies of the December ratings may request them from the appropriate regional medical director of the Public Health Service, FSA.

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New Developments in Laboratory Methods--Phosphatase Tests

The Applied Laboratory Methods Committee of the International Association of Milk and Food Sanitarians, Inc., has reviewed progress made or studies under way during the past year relative to various phases of laboratory methods of interest to milk and food sanitarians. Of particular interest to Navy sanitarians is the improved phosphatase test. This test was developed by one of the Committee members, Harry Scharer of Allied Laboratory Research. The modified procedures will be included in the next edition of Standard Methods, in the chapter on screening tests. Military stocks of the phosphatase test tablets after lot No. 2,000 will include the improved reagent. The improved test reduces the source of errors due to comparison of color shades and makes the accuracy less dependent on timing.

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NRC Projects on Milk and Ice Cream

"Sanitary Milk and Ice Cream Legislation in the United States," a bulletin (No. 121) of the National Research Council, is a study of laws and ordinances establishing sanitary standards for milk, cream, and ice cream. The bulletin has recently been distributed to all district medical officers for the use of the milk sanitation coordinator and area milk sanitation officers. It should prove of value in the milk sanitation control program.

NRC publication No. 250, "Sanitary Milk Control and Its Relation to the Sanitary, Nutritive, and Other Qualities of Milk," by Dahlberg, Adams, and Held, will soon be published and will be given similar Navy distribution. It is based on an extensive study of sanitary milk control legislation in 8 large cities and should be extremely valuable to Navy sanitarians.

New Filter Method for Testing Drinking Water Successful at Inaugural

The Washington Post reports that a new technique for testing drinking water in one-fourth the usual time was tried on the water supply for the "Pullman cities" housing 8,000 inaugural visitors in Washington. It was the first time the new filter method was used on such a large scale.

More than 200 samples were taken and then divided, and part of each sample was checked by the old method and part by the new, which utilizes a tissue-thin membrane on which the bacteria filtered through are cultivated. The results by both methods were identical, and approval was given the water from all the cars but one (containing water brought from the West Coast). The testing with the new membrane filter method required only 18 hours--the time it takes the colonies to grow so that the bacterial density may be quantitatively estimated. The traditional procedures take 72 hours.

Though water was carried to the temporary hotels in sterilized trucks, it was handled in several stages, at each of which it could have become contaminated.

The adoption of the new method in local laboratories is awaiting solution of certain problems involved in the change-over.

A complete report on the status and availability of the membrane filter, as a result of an intensive study of its application to water testing, is soon expected from the Public Health Service.

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Inverted Bunsen Burner for Decontamination of Outdoor Terrain

"The Bunsen burner has long been an accepted tool for direct sterilization of biological materials in the laboratory," writes the BuDocks Technical Digest (Dec. 1952). "Adaptation of this principle is being used in the new 'Terrain Burner' being developed by the Bureau for decontamination of outdoor terrain previously exposed to a heavy concentration of BW agents. The unit will consist of a series of high temperature burners mounted vertically on a two-wheel cart which can be towed or pushed. The auxiliary equipment and fuel will be carried on the prime mover.

"Decontamination of a wide swath will be possible by 'gang' mounting several of the Terrain Burner units, similar to golf course lawn mowers," the article concludes.

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Globulin Allocation Board Set up by National Research Council

The medical sciences division of the National Research Council has appointed members of the new Globulin Allocation Board which, while nominally an advisory panel to the Office of Defense Mobilization, actually will function as a sort of supreme court on the manufacture and allocation of the limited output of gamma globulins. Composition of the panel will be made public after acceptances have been received from appointees. Experts in poliomyelitis, public health, epidemiology, vital statistics, and other specialties will comprise the group of 8 to 10 members. Although representatives of industry, government, and voluntary associations have reached agreement on general principles, it will be the responsibility of the allocation panel to establish criteria to the end that a product in short supply, but for which demand will be heavy next spring and summer, may be distributed so as to accomplish the most good.

NRC emphasizes that all of its permanent committees will be available to assist the new ad hoc board. Staff members likewise will be at its service. (Washington Report on the Medical Sciences, Dec. 29, 1952)

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